



Memorandum

Environmental Health and Safety

TO: Craig Hayton, Parks and Recreation, Senior Grounds Keeper

FROM: Raymond Hagen, Hazmat/Safety Specialist
Richard Dalton, WUD Safety/Training Coordinator

CC: Mark Richwine, Parks and Recreation, Manager
Sam Thompson, Parks and Recreation, Deputy Manager
Steve Amelotte, Parks and Golf, Supervisor
Dick Mickle, Parks and Golf, Supervisor
Timothy Pfannenstien, Parks and Golf, Supervisor
Gerry Santee, Parks and Golf, Supervisor
Laura Guerrero, Risk Manager
David Tavares, Hazardous Materials, Supervisor
Scott Mosley, Hearing Conservation Program, Administrator

DATE: **July 21, 2006**

SUBJECT: HEARING CONSERVATION – EMPLOYEE NOTIFICATION

This memo and attached documentation is to notify you that noise monitoring was performed in accordance with 29 CFR 1910.95(e) and the OSHA Technician Manual (OTM) Section III, Chapter 5, evaluation of noise exposures. Initial noise monitoring was performed on August 20, 2003. A noise walk around survey of the area and monitoring of new equipment was performed on July 18, 2006.

Attached is the Noise Monitoring Survey results and employee notification letter. **All** these documents must be posted for ten **(10)** working days in a prominent area, where **all** employees who work with equipment identified in the survey at the Parks and Recreation Department have access. Based on the initial monitoring results completed in 2003 and subsequent monitoring of new equipment, your employees will remain in the City of Tempe, Hearing Conservation Program.

If you have any questions about the monitoring, hearing protective devices, placement of sign(s), or wish to have additional monitoring performed, please contact Program Administrator, Scott Mosley at 350-8877.

POST FOR TEN WORKING DAYS

HEARING CONSERVATION NOTIFICATION

This serves to notify you that noise monitoring was performed to measure the duration and intensity of occupational noise in your work environment. The results were compared to allowable exposure standards called PELs (Permissible Exposure Limits) established by OSHA. This PEL is calculated on a Time Weighted Average (TWA) over a normal 8-hour work shift. The results indicated that there is a high potential for you to exceed the PEL/TWA. Therefore, employees assigned to the Parks and Recreation Department who work in areas or with equipment identified in the attached Noise Monitoring Survey are **covered** by the City of Tempe, Hearing Conservation Program.

Therefore, you will be required to receive annual audiometric hearing tests and training. Additionally, you are required to wear hearing protection. The use of hearing protective equipment provides an additional protective barrier between you and potentially high noise levels.

If you have any questions about monitoring, other requirements identified or wish to have additional monitoring performed, please contact 350-8877 or 350-2818.

POST FOR TEN WORKING DAYS

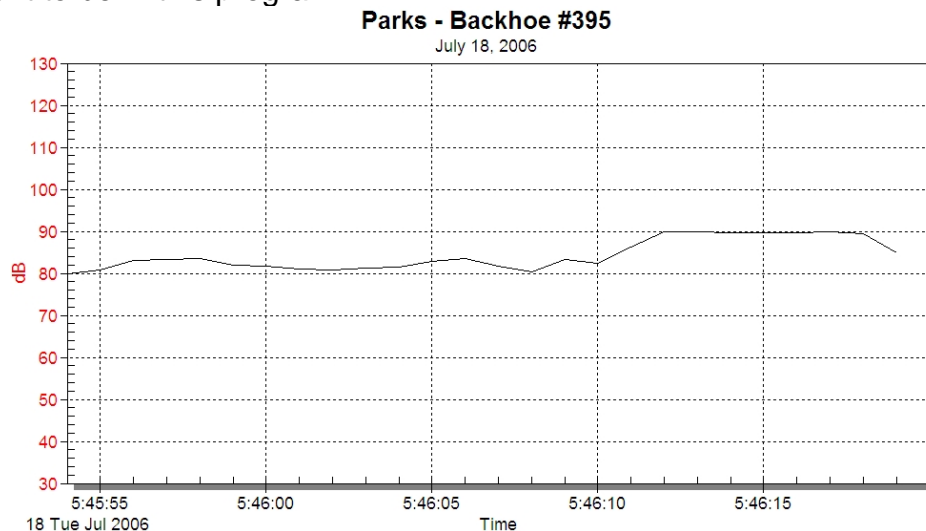
Monitoring Synopsis

The sound meter used to perform monitoring was a Type 2 meter with data logging abilities and a frequency range of 31.5Hz ~ 8KHz. The measuring level range is 30 ~ 130dB in the "A" frequency rating. Accuracy is approximately +/- 1.5 dB. The meter was calibrated per manufactures recommendations using a standard Acoustic Calibrator (94 dB) at the start and end of monitoring and was found to be within the acceptable ranges.

There are three noise monitoring graphs included of the new equipment identified during this walk around survey. When screening for noise exposures, sound level meter measurements and estimates of the duration of exposure are sufficient. The resulting spot readings can be used to determine the need for a more complete evaluation. Based on this monitoring event, no additional monitoring is required to establish the need for employees to remain in the Hearing Conservation Program. The monitoring event includes equipment that is used throughout the City of Tempe by Parks employees. While each individual piece of equipment was not monitored, a representative sample of each type/style of equipment was monitored.

Additional safety concerns were raised in regards to hearing protection devices (HPD) and their use during operation of motor vehicles on public roadways. Extreme care should be taken to ensure the equipment can be operated safely when HPD's are used.

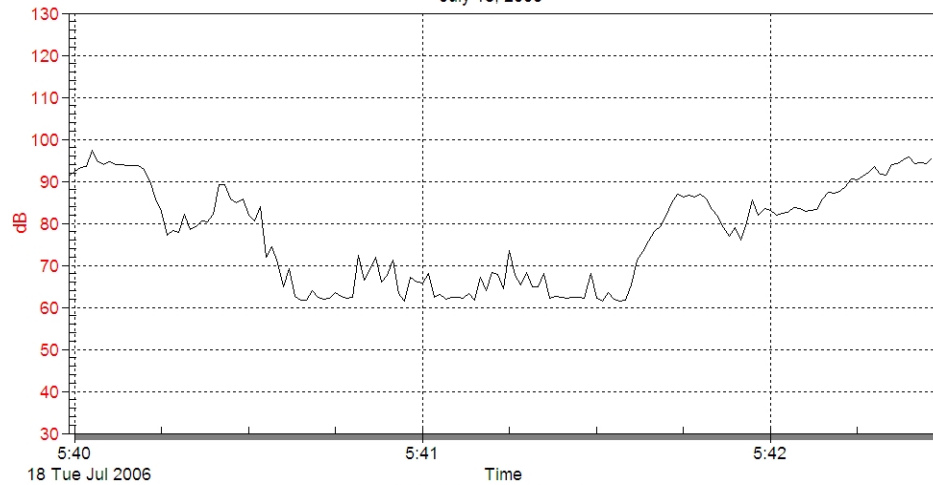
Calculation of the Time Weighted Average (TWA) is extremely difficult to determine based on numerous and varied tasks performed by individual parks personnel throughout each day. Therefore the estimated time in conjunction with peak readings and possible worse case scenarios were used to determine the need for employee's requirement to be in this program.



POST FOR TEN WORKING DAYS

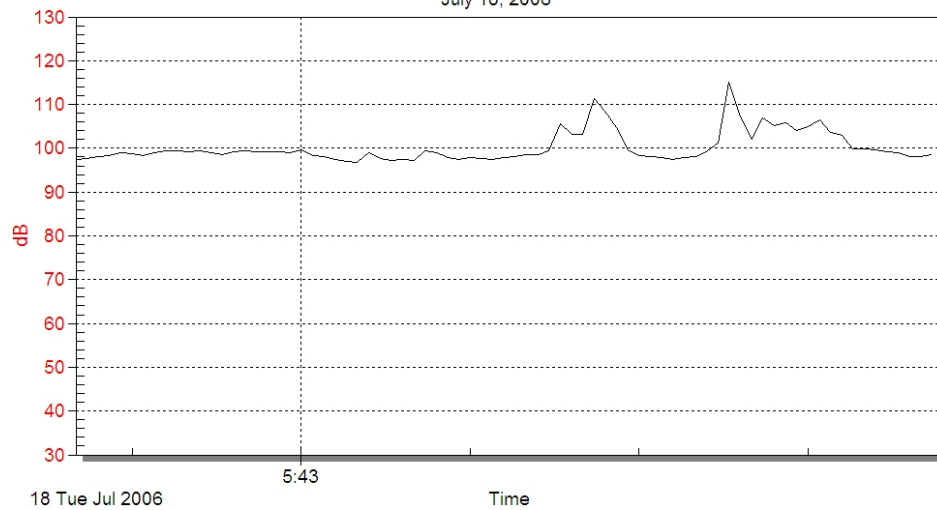
Parks - Mower 106

July 18, 2006



Parks - Mulcher

July 18, 2006



Previous Monitoring Results Conducted in 2003

Area/Equipment	Peak dBA	Area/Equipment	Peak dBA
Chain Saw	106.4	Backhoe #233	89.4
Line Trimmer	105.2	Shop Metal Saw	101.2
Backpack Blower	99.3	Shop Drill Press	70.3
Hedge Trimmer	108.2	Hand Metal Grinder	100.7
Bunker Rake #120	83.5	Cart Mounted Push Blower	95.3
Power Washer	93.0	Gang Mower F-10 #431	89.2
Front Loader #540	92.7	Deck Mower #1153	100.6
Ditch Witch	96.0	Walker GHS Mower	92.0

POST FOR TEN WORKING DAYS

Findings

The following new equipment was monitored with the peak dBA indicated.

Area/Equipment	Peak dBA	Area/Equipment	Peak dBA
Backhoe #106	90	Mulcher	112
Parks Mower (New)	99		

As addressed previously additional monitoring will not be required to establish the need for employees to be included in the Hearing Conservation Program and the Time Weighted Average (TWA) for each piece of equipment was not established. Based on the diversity of work operations, time limits with identified equipment and the diverse work requirements of individual employee's it was difficult to determine TWA's. In most cases the employees time of use and equipment decibel readings may in fact be under the level identified in §1910.95 (c) to be included in the City of Tempe Hearing conservation program. As stated previously it is difficult to determine the length of time and individual use of equipment during each work day. Therefore, it was determined that all Parks and Recreation employees that work with identified equipment remain in the City of Tempe's Hearing Conservation Program.

Additionally, a peak reading of 112 dBA was recorded at the feed tray of the Mulcher. Discussions with employees indicated peak readings may decrease or increase based on the type and age of wood that is fed into the Mulcher. Parks employees indicated the estimated time of use for a typical day is 0.30 hours. Therefore, using §1910.95, Appendix A, Noise exposure computation, Noise dose computed Table G-16a and assuming average of 105 dBA this equipment can only be used for **1.0 Hour per day** by an individual employee.

Table 1 indicates the duration and sound levels to which employees may be exposed to occupational noise without experiencing hearing loss. Employees must not be exposed to impact noise greater than 140 dBA peak.

TABLE 1

POST FOR TEN WORKING DAYS

PERMISSIBLE NOISE-EXPOSURE REQUIREMENTS
DURATION (hrs/day) DOSE (%) SOUND LEVELS (dBA)

8 **	33	85
8	100	90
6	100	92
4	100	95
3	100	97
2	100	100
1.5	100	102
1	100	105
0.5	100	110
0.33	100	112
0.25	100	115

Determination

Based on initial monitoring performed in 2003, this work group was placed in the City of Tempe, Hearing Conservation Program. Additional monitoring and various site visits has determined that Parks and Recreation personnel that work with equipment/types identified in this report will **remain** in the program.

Requirements

Based on the nature of operation signage of individual works areas may be difficult. However, when possible signs should be placed prominently in work areas to properly notify individuals of the potential for exposure to high noise. Education and training will be used to notify all Parks and Recreation employees of high noise equipment and areas. Additionally, it is the responsibility of Supervisors to properly notify new employees, outside employees or contractors that enter high noise areas of the hazards and required personal protective devices required. The appropriate level of hearing protective device is:

- Any Hearing Protective Device for all equipment shall have a minimum NRR value of 29.
- When using the Mulcher, employees will use foam ear plugs in conjunction with ear muffs. The ear plugs will be so designed as not to break the seal of the ear muffs.

Additionally, individual employees will not be permitted to operate the Mulcher for greater than 1.0 Hour per day. (Operation shall mean feeding of landscaping debris into the Mulcher)

POST FOR TEN WORKING DAYS